

## CLAIMS

I claim:

1. A device for detecting neutrons, comprising:

5       a detection body disposed between electrodes, wherein said detection body comprises hexagonal boron nitride;

          power supply means for applying a voltage to said electrodes; and

          means for detecting and measuring a signal response emitted by said detection body as said detection body is exposed to neutrons.

10    2. The device of claim 1, wherein said hexagonal boron nitride is pyrolytic hexagonal boron nitride.

3. The device of claim 1, wherein said boron nitride is enriched with the isotope  $^{10}\text{B}$ .

4. The device of claim 3, wherein said enrichment is up to about 100%.

15    5. A method for detecting neutrons, comprising:

          providing a detection body disposed between electrodes, wherein said detection body comprises hexagonal boron nitride;

          exposing said detection body to thermal neutrons; and

          measuring a signal produced as the result of a conversion process

20    within said hexagonal boron nitride, wherein neutrons incident on said detection body are converted to a plurality of detectable energetic charged particles.

6. The method of claim 5, wherein the hexagonal boron nitride is pyrolytic hexagonal boron nitride.